ANNUAL REPORT

of the

DAIRY PROCESSING

and

DAIRY PRODUCTION BRANCHES

for the Year

1987 - 1988

Alberta
AGRICULTURE

ANNUAL REPORT

OF THE

DAIRY PROCESSING BRANCH

AND

DAIRY PRODUCTION BRANCH

FOR THE FISCAL YEAR

1987 - 1988

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DAIRY PRODUCTION BRANCH

Dairy production branch activities and services included dairy farm inspection, data processing of milk recording information and support for extension, advisory and research functions relating to the dairy industry.

The dairy industry in Alberta was very healthy. Abundant supplies of excellent quality feed combined with good prices for cull cows resulted in improved production levels per cow. There was increased use of computer technology on dairy farms particularly in milk recording and feeding management.

Dairymen expressed a desire to be informed and advised as quickly as possible concerning the results of research and applicable new technology.

The quality of Alberta's milk supplies continued to improve during the year. Nearly all milk producers met the premises and quality requirements for a certificate of registration.

There was considerable international interest in Alberta's dairy industry, particularly in dairy embryos. A highly successful contract to Russia was completed during the year, which should provide future opportunities in this expanding market.

European immigrants with a background in the dairy industry view Alberta as an attractive location for investment in a dairy farming enterprise.

Restructuring of the milk marketing mechanism in the province was the focus of discussions at both producer and processor levels. Equitable distribution of the milk supply to optimize producer and processor benefit was still unresolved as of March 31, 1988.

Levies under the market sharing program on industrial milk were reduced in response to improved world markets for skim milk powder.

Alberta milk producers, through their association, contributed directly to the financial support of dairy research at the Agriculture Canada Research Station, Lethbridge.

Resource Services

The dairy production branch assisted regional staff in providing workshops and seminars on timely production issues. Regional dairy specialists were very effective in the identification, development and delivery of dairy extension services throughout the province. Topics such as condition scoring, quota management, feeding, raising replacements and milking management were very well received by the industry.

A multi-regional initiative in forage production and managment was very successful. The meetings, held in Nisku, Olds and Lethbridge attracted over 400 people.

The first annual Alberta Dairy Congress held at Leduc provided exhibitors and guest speakers with an excellent opportunity to present new technology to Alberta's milk producers and the general public. This dairy trade and technology event was highly successful, attracting many exhibitors and over 1,500 people.

A film was developed titled "The Story of Milk" which covers milk from the cow to the consumer. This film is primarily for school and general public use.

The sixth annual Alberta Dairy Seminar was held in Banff. This seminar was again sponsored by the University of Alberta, Alberta Milk Producers' Association and Alberta Agriculture. Topics included: bilateral and multilateral trade issues, tax reform, feeding the high producing cow, reproduction and technological change in the dairy industry.

The newsletter, "Alberta Dairy Producer", was published monthly. Increased emphasis on reporting of dairy research activities was well received by the industry. This publication continues to be a primary source of marketing and production information for the dairy industry.

Several factsheets were developed for use by Alberta dairy producers. Topics included: condition scoring, raising replacements, health management, interpretation and use of Dairy Herd Improvement reports, as well as milking management. New factsheets were distributed to producers with the Alberta Dairy Producer newsletter.

In-service training featured milk quality issues, refrigeration, milk metering and regional program development.

A research project at the University of Alberta concerning the potential impact of a multiple component pricing system for milk was supported. Assistance was provided to a research project on new mastitis control technology at the Agriculture Canada Research Station, Lethbridge. The branch co-operated with the University of Lethbridge in a study on the probable effect of bovine somatotropin use on the Alberta dairy industry.

Staff involvement with research institutions was increased. Research projects and on-farm demonstrations included progesterone testing, clitoral stimulation, fly control and embryo transfer technology.

Dairy Farm Inspection

The Dairy Production Branch continued to provide inspection and advisory services to Alberta dairymen in the areas of milk quality,

milk production, equipment standards, construction and upgrading of dairy facilities.

Dairy Farm Inspection staff performed 3,304 farm inspections in 1987-88 and an additional 1,819 farm consultations.

A total of 36,743 milk samples were analyzed for compliance with current milk quality standards. The Milk Grade and Price program, during the twelve month period ending March 31, 1988 recorded 97 Standard Plate Count violations, 16 Freezing Point violations and 72 Inhibitor violations - totalling 185 violations, a decrease of 63 violations from the year previous.

The milk grade and price program and advisory services provided to producers continued to contribute to the excellent quality of milk produced in Alberta in 1987-88. The milk processors, through farm service programs continued to support milk quality improvement on dairy farms.

A non-compliance rate of 3.8% was achieved in the fluid milk sector, a further improvement from 4.3% for the previous year. Thirty four loads of milk were destroyed due to inhibitor contamination, a decrease of 13 loads compared to 1986-87.

Funds collected from producers resulting from milk grade deductions, were allocated to pay innocent producers for lost milk and to compensate milk transport operators when confirmation was required

for suspicious positive loads and for disposal of loads tested positive. The remainder of the funds were redistributed to milk producers on a monthly basis by the Alberta Dairy Control Board.

The branch co-operated with the Dairy Control Board in providing advisory services necessary to permit a final group of 175 producers to participate in the graduated entry program. Since 1974 a total of 1,105 Alberta dairymen obtained fluid milk quota, at no cost, through the graduated entry program.

As of March 31, 1988, there were 1,502 milk producers in Alberta, a decrease of 47 from the year previous. Of that total 1,495 were certified to supply raw milk to the fluid market and 7 supplied milk for industrial purposes only. Industrial milk producer numbers further decreased by 23 as producers continued to upgrade their facilities to meet industry certification requirements or voluntarily discontinued milk production.

Bulk milk somatic cell counts continued to be monitored and advisory assistance was provided to reduce the incidence of mastitis in dairy herds. Bulk milk tank somatic cell counts averaged 313,908 cells per millilitre for certified producers and 547,194 cells per millilitre for industrial producers. There was a significant improvement in the average somatic cell count for certified producers as compared to 1986-87.

The Alberta Award of Excellence sponsored by Alberta Agriculture was introduced in 1986 to recognize dairy producers for excellence in quality milk production and maintenance of dairy premises. One hundred and twenty five milk producers were presented with the award at the annual Alberta Dairymen's Association Convention in February 1988, compared to 76 in the previous year - an excellent response by the milk producers of Alberta.

TABLE 1

The following table summarizes the activities of Dairy Farm Inspection. Comparisons are based upon April 1 to March 31 year basis.

	1986-87	1987-88
Number of Certified Milk Producers	1,519	1,495
Number of Industrial Milk Producers	30	7
TOTAL PRODUCERS	1,549	1,502
Inspections of Dairy Farm Premises	3,155	3,304
Non-Inspection Dairy Farm Calls	1,474	1,819
TOTAL FARM CALLS	4,629	5,123
TOTAL RAW MILK SAMPLES ANALYZED	38,561	36,743
Quality of Milk Samples Analyzed		
Fluid Milk Samples Non-Compliance (75,000/mL S.P.C.)	4.3%	3.8%
Industrial Milk Samples Non-Compliance (200,000/mL S.P.C.)	4.0%	8.0%
Industrial Milk Samples which met Fluid Milk Standards	87.1%	84.0%
Average Somatic Cell Counts (Leucocytes) - Fluid	364,490	313,908
- Industrial	618,570	547,194
Number of Violations - SPC	119	97
- Inhibitors	105	72
- Cryoscopic Analysis	24	16
TOTAL VIOLATIONS	248	185

Number of Violations

	1983-84	1984-85	1985-86	1986-87	1987-88
1 Violation	212	199	179	153	133
2 Violations	87	73	64	63	38
3 Violations	27	33	19	19	10
4 Violations	7	7	10	7	2
More than 4	9	4	2	6	2
	342	316	274	248	185

Milking Management

A milk metering project was completed in co-operation with Alpha Milk Company, Red Deer. The truck mounted milk meter completed 1,055 milk pickups, averaging 6.5 litres less than the dipstick measurements. This difference represented nearly one million dollars to Alberta's dairy industry. While the accuracy of the milk meter was verified before and after the project, capital cost, maintenance and functional issues need to be resolved.

Alberta's milk meter studies are contributing to the general knowledge and functional requirements of truck mounted milk meters for payment purposes in North America.

Technical assistance was provided to Manitoba Agriculture. An Alberta milking management specialist conducted a very successful seminar and workshop for the Manitoba staff responsible for milk quality and milking management extension services.

A fifty dollar user fee was implemented July 1, 1987 for milking equipment evaluations, excluding new installations checked for proper function.

A total of 91 equipment analyses were completed by the two milking management specialists. Another 33 farm calls were completed in response to milking equipment cleaning problems. Twenty four stray voltage concerns were investigated. There were 18 producer

consultations on proposed purchases and 29 new installations evaluated for proper design and function.

Milk Recording

All field services and fees associated with the Alberta Dairy Herd Improvement (D.H.I.) and federal Record of Performance (R.O.P.) programs were administered by Alberta Dairy Herd Improvement Services (A.D.H.I.S.). Fees for milk recording remained at $5.50 per cow per year for owner-sampler and $19.00 per cow per year for supervised service. The cost of individual cow somatic cell count data remained unchanged at $2.00 per cow per year.

As of December 31, 1987, 129 herds were enrolled on the supervised D.H.I. option. At an average herd size of 74 cows, this totalled 9,574 cows. An additional 119 herds comprised of approximately 8,000 cows were enrolled on the federal R.O.P. program. The owner-sampler D.H.I. option was subscribed to by 644 dairymen who enrolled 40,857 cows for an average of 63 cows per herd. The somatic cell counting service continued to be very popular with 675 herds and 43,500 cows enrolled.

The continued improvement in production per cow of the Alberta dairy herd, along with only a slight increase in milk and dairy product sales, has meant a decline in the number of cows in Alberta and those

on test. The challenge remains to make milk recording a basic management tool on every dairy farm in Alberta.

During the year system support functions were transferred from Alberta public works supply and services to A.D.H.I.S. Changes were made to the agreement between Alberta Agriculture and A.D.H.I.S. to accommodate the privatization of data processing responsibilities.

The inclusion of qualified owner-sampler records in sire proofs is a significant step forward for the milk recording industry. Access to the wealth of information in owner-sampler records will assist in the genetic advancement of the Canadian dairy herd.

Alberta Agriculture's funding to milk recording is at a level not enjoyed by the dairy industry in any other province. Other sources of funding for milk recording are Agriculture Canada and fees for services provided by A.D.H.I.S. to the dairy producers of Alberta. Alberta Agriculture also provides lab testing, extension services and mainframe computer access as well as office space for most of the A.D.H.I.S. field staff.

R.O.P./D.H.I. LEVEL OF PERFORMANCE

(As of December 31, 1987)

R.O.P.

Breed	Number of Records	Ave. Milk (kg.)	BCA Milk	Ave. Fat (kg.)	BCA Fat
AYRSHIRE	549	6,120	173	246	169
BROWN SWISS	6	5,682	143	233	147
GUERNSEY	1	4,112	123	165	99
HOLSTEIN	5,396	7,314	154	265	152
JERSEY	364	4,595	154	226	140
TOTAL	6,316	7,051	156	261	153

OFFICIAL D.H.I.

Breed	No. of Records	Ave. Milk (kg.)	BCA Milk	Ave. Fat (kg.)	BCA Fat	Ave. Protein (kg.)	BCA Protein
AYRSHIRE	91	6,160	175	236	166	214	191
BROWN SWISS	70	6,155	160	248	161	225	170
GUERNSEY	37	5,391	159	245	144	199	168
HOLSTEIN	6,905	7,672	165	267	156	245	166
JERSEY	171	5,088	170	237	147	201	179
TOTAL	7,274	7,566	165	266	156	243	167

Average protein (kg.) and protein BCA are based on fewer records than total number for breed in table.

OWNER SAMPLER D.H.I.

Breed	No. of Records	Ave. Milk (kg.)	BCA Milk	Ave. Fat (kg.)	BCA Fat	Ave. Protein (kg.)	BCA Protein
AYRSHIRE	248	5,426	149	217	146	190	160
BROWN SWISS	146	6,555	159	250	152	229	159
GUERNSEY	28	5,403	158	220	131	204	167
HOLSTEIN	31,316	6,875	146	242	140	223	150
JERSEY	254	4,248	139	190	115	181	156
TOTAL	31,992	6,840	146	241	140	222	150

Average protein (kg.) and protein BCA are based on fewer records than total number for breed in table.

ALBERTA DHI COW/HEIFER ENROLLMENT TOTALS

(as of December 31, 1987)

	D.H.I. Supervised				D.H.I. Owner-Sampler				
	NIP A or Registered	NIP U or Higher	Grade	Total Supervised	Registered	NIP A or Higher	NIP U or Grade	TOTAL Owner-Sampler	D.H.I. Grand Total
Ayrshire	38	20	2	60	80	10	230	320	380
Brown Swiss	68	1	6	75	20	17	157	194	269
Guernsey	44	3	0	47	3	2	27	32	79
Holstein	3,078	5,204	929	9,211	2,424	18,878	18,629	39,931	49,142
Jersey	166	4	9	179	168	31	177	376	555
TOTAL	3,394	5,232	946	9,572	2,695	18,938	19,220	40,853	50,425

DAIRY PROCESSING BRANCH

Overview

Total milk supply was up slightly from the previous year. Fluid milk sales, on a per capita basis, continued to improve but were still significantly below the level of six years ago. Better quota management by producers resulted in no milk being shipped out of the province during the "flush" season. During this time the milk drying plants and some cheese manufacturing plants were operating at maximum capacity.

Dairy Manufacturing Plants

The renovation and modernization of most plants continued in varying degrees of complexity. A high level of interest continued for the establishment of dairy manufacturing plants, particularly for the manufacturing of ice cream, cheese and the use of goat's milk. Although several enquiries were received, few applications were made because of high cost and uncertainty of milk supply.

Existing plants continued to investigate the addition of product lines to their operation. A specialty cheese plant commenced production of a gourmet cream cheese. The manufacturing process being used is under an arrangement with a European firm. The plant's

existing distributor and marketing network will be used for the new product which is sold under the local brand name.

Construction started on a small fluid milk and ice cream plant in the north-east part of the province. Initially scheduled to commence processing early in 1988, several delays have been encountered. The completion date is not known at the time of writing.

The Donalda Co-operative Creamery Association closed their butter manufacturing plant. The plant had been in operation for 60 years and was one of the last rural creameries that relied on farm separated cream. The number of shippers at the time of closing was 21, many of whom are now shipping to another creamery in the area.

An independently operated plant in the Medicine Hat area commenced construction of an addition that will double the size of the plant. Included in the addition is an expanded cold storage, enclosed loading facilities, employee rooms and provisions for a laboratory.

Some cheddar cheese plants have replaced their bed or horizontal cheese presses with the mobile "A" frame or vertical type with a resulting improvement in space utilization.

In co-operation with the Calgary Zoo, the Alpha Milk Company, Calgary, introduced a two litre package of ice cream featuring the face of a panda in white and black ice cream with a border of strawberry pink. While molded designs are not new, the detail and sharpness are

unique and the process is being patented. The development and introduction coincided with the presence of two Giant Pandas at the Zoo and tied in with the Panda Magic theme of the City of Calgary.

A small family operated cheese plant that started manufacture of specialty cheese in the Edmonton area a year ago has closed down. Manufacturing and marketing costs in relation to the volume produced was said to be the deciding factor.

The major program introduced a year ago for the inspection and testing of milk pasteurization units continued as a high priority. All components of the pasteurizers are inspected and subjected to a variety of tests to ensure that all dairy products processed through them are effectively pasteurized and that the pasteurized products cannot be contaminated with raw product. Several plants have completed the necessary modifications and have had the units approved or are awaiting the final inspection. The plants must have the pasteurization units approved by the end of calendar 1988 to be eligible for the 1989 license. The co-operation from and interest by the industry has been exceptionally good, making this important branch program much easier to achieve.

In preparation for the new requirements that all operators of pasteurization units be licensed, the branch has prepared a comprehensive Pasteurizer Operator Manual. This will be used as a study guide in the training and licensing of the operators and as a

reference manual for the plants. The training, examination and licensing of the pasteurizer operators will commence in 1989.

Plant inspection programs were continued to ensure compliance of all Alberta dairy manufacturing facilities and their products with existing regulations.

The branch continued to participate in the federal in-depth plant inspection program. Most of the fluid milk processing plants are newly built or recently renovated and continue to receive high scores upon inspection.

New inspection guidelines were introduced by Agriculture Canada after consultation with the provinces. These guidelines reflect new technologies, equipment and components available to the industry. As a result of these, the plant scores dropped in all areas.

This branch is participating, and represents the four western provinces, on a committee to review and update the plant inspection program. This is the first major review since the program was introduced in 1971. The committee members represent provincial and federal governments and the dairy industry.

Current positions and comparative data for last year is as follows:

	1986-87	1987-88
Alberta Average Plant Score	86.1	84.3
National Average Plant Score	82.6	82.2
Lowest Scoring Plant In Alberta	76.4	72.7
Highest Scoring Plant in Alberta	99.1	98.6

Dairy Products

Bacteriological and compositional standards of fluid and manufactured dairy products remained very high and substantially higher than the regulatory minimum. The branch continued to concentrate on milk product keeping quality as reflected by a stressed product test as the yardstick by which quality was measured. This more stringent test is necessary since products must remain fully acceptable to consumers after sometimes lengthy periods in the distribution system, not always under ideal storage conditions. Dairy processing specialists investigated isolated lapses in quality rather than chronic difficulties in producing satisfactory products.

Virtually all freshly processed milk met Health Standards. After subjection to severe conditions (7 days at 7°C), 78.0% were still within requirements of the regulations. The branch continues to work towards 100% compliance at both levels.

Licensing

Licenses Issued	1986-87	1987-88
Milk & Cream Graders & Testers	90	77
Cream Graders	65	40
Plant Milk Graders	135	117
Bulk Tank Milk Graders	287	242
Dairy Manufacturing Plant	37	49

Regulatory

Dairy Processing Specialist activities in regulatory functions were:

	1986-87	1987-88
Dairy Plant Inspections	400	508
Cream Grades Checked	958	1216
Cream Grades Adjusted	1	0
Cream Tests Checked	484	738
Cream Tests Adjusted	2	0
Bulk Tank Trucks & Drivers Inspected	150	208

Margarine

The branch's responsibilities under the Margarine Act were carried out at a similar level of activity as in previous years. Margarine produced and/or sold in the province was sampled and analyzed throughout the year and found to comply fully with compositional requirements. There were continued attempts to market imitation dairy products in contravention of the Dairy Industry Act. As well as infringing on the Dairy Industry Act, methods used by promoters frequently contravened other regulations, e.g. those of the Health Protection Branch and Consumer and Corporate Affairs. This branch will continue to collaborate with other agencies to regulate the activities of promoters of imitation dairy products.

Extension

Dairy processing specialists worked closely with dairy processors in the implementation of technological changes and in broadening the

range of dairy processing in the province. A major extension activity in recent years has been a voluntary Certification Program for dairy plant employees to assist in attaining improved quality through increased education and awareness. Lower turnover of staff in most dairy plants accounts for the reduction in issue of Dairy Plant Worker certificates. The awarding of certificates in specialist categories such as Cheesemaker, Plant Sanitarian, and Pasteurizer Operator, has increased.

The licensing of Milk and Cream Graders and Testers, and Bulk Milk Graders is a legislative responsibility of this branch. In view of the important role of the Bulk Milk Grader in the collection of samples by which the producer is paid, especially since the introduction of the milk grade and price program, the branch has increased emphasis on testing, retesting and inspection of Bulk Milk Graders.

A film for the training of Bulk Milk Graders in the correct procedures for picking up milk was produced during the year in co-operation with Information Services Division. Being an Alberta Agriculture production it does not rely on material from other jurisdictions whose requirements may differ slightly from ours.

Together with Agriculture Canada and the Alberta Dairymen's Association, the processing branch continues to be active in sponsoring and judging dairy product quality competitions. Most competitions are based on monthly samples. Winners are recognized annually at the Dairymen's Convention.

Special Projects

The principle activity of Special Projects to March 31, 1988 was the preparation of amendments to the Dairy Industry Act and relevant changes in the proposed new Dairy Industry Regulations under the Act.

The amendments to the Act received royal assent during the year and will be proclaimed at the same time as the Regulation. Consultations with industry and other government departments was completed by year end. Proclamation of the Regulation is expected early in the new year.

Other activities related to an investigation of the security requirements for dairy manufacturing plants under the Dairy Industry Act; the preparation of a proposal to establish a dairy producers' protection fund for discussion with industry; ongoing consultation with industry on regulatory and legislative matters; investigating and assisting in the resolution of problems associated with the dairy industry.

Sometime was devoted to aquaculture on behalf of the department. The branch provides a resource person to develop and maintain a close working relationship with the private and public sectors and to respond to requests for information.

TABLE I Estimated Farm Value of Alberta Milk Production April 1987 - March 1988

The quantity, price, value and utilization of milk production during April 1987 to March 1988 are reported in the following table. To indicate changes from the previous year, 1986-87 figures have been included.

	Year	Butterfat Production ' 000 kg	Milk Equivalent '000	% of Total	Prices $	Value $'000
Butterfat for Creamery Butter	1987-88	684	19,542 L	3.32	4.610/kg	3,153
	1986-87	787	28,485 L	3.88	4.622/kg	3,638
Milk Purchased for the Manufacture of Powder and Butter (1)	1987-88		115,527 L	19.60	39.93/hL	46,130
	1986-87		114,790 L	19.81	39.41/hL	45,239
Milk for Cheesemaking	1987-88		119,496 L	20.27	39.93/hL	47,715
	1986-87		110,212 L	19.02	39.41/hL	43,435
Milk for Concentrating and Milk & Butterfat for Ice Cream & Misc. Products (2)	1987-88		57,182 L	9.70	41.63/hL	23,805
	1986-87		54,963 L	9.49	41.21/hL	22,650
Milk Purchased for Fluid Purposes	1987-88		260,119 L	44.13	47.89/hL	124,571
	1986-87		256,694 L	44.31	49.31/hL	126,576
Kept on Farms, Skimmilk for Creamery Butter	1987-88		17,588 L	2.98	18.38/hL	3,233
	1986-87		20,228 L	3.49	18.27/hL	3,696
Estimated Federal Subsidy	1987-88					21,043
	1986-87					19,852
TOTAL	1987-88		589,454			269,650
	1986-87		579,372			265,086

(1) Includes milk used for the making of cottage cheese.

(2) Does not include butterfat from creamery butter used in the manufacture of ice cream

TABLE II Estimated Production and Value of Factory Dairy Products April 1987 - March 1988

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during April 1987 to March 1988, with corresponding figures for 1986-87 added to provide a means for comparison.

	Year	Quantity ' 000	Price $	Value $ '000
Creamery Butter (kgs)	1987-88	7,062 kg	5.461/kg	38,566
	1986-87	7,409 kg	5.454/kg	40,408
Cheddar Cheese (kgs)	1987-88	6,836 kg	6.714/kg	45,897
	1986-87	6,822 kg	6.746/kg	46,021
Variety Cheese (kgs)	1987-88	5,427 kg	5.906/kg	32,052
	1986-87	5,022 kg	5.766/kg	28,957
Ice Cream (litres) (1)	1987-88	29,695 L	1.860/L	55,233
	1986-87	31,108 L	1.850/L	57,549
Fluid Milk Sales (litres)	1987-88	218,474 L	.800/L	174,779
	1986-87	215,084 L	.790/L	169,916
Fluid Cream Sales (litres)	1987-88	10,146 L	1.570/L	15,929
	1986-87	9,520 L	1.570/L	14,946
Fluid Skimmilk, Buttermilk and Chocolate Sales (litres)	1987-88	38,360 L	.862/L	33,066
	1986-87	32,385 L	.862/L	27,916
Miscellaneous Manufactured Products (2)	1987-88			119,597
	1986-87			122,189
TOTAL	1987-88			515,119
	1986-87			507,902

(1) Includes hard and soft ice cream.

(2) Includes concentrated milk products, cottage cheese, whey cheese and yoghurt.

TABLE III Alberta Dairy Statistics 1955-1987

YEAR	TOTAL MILK	ICE CREAM		BUTTER	
	1,000,000 of Units	Production	# plants	Production	# plants
1955	1,438 lb	2,716 gal	15	31,326 lb	89
1960	1,650 lb	3,623 gal	18	37,338 lb	86
1965	1,641 lb	5,242 gal	16	36,562 lb	81
1970	1,529 lb	5,634 gal	16	29,311 lb	59
1973	1,396 lb	6,332 gal	15	23,282 lb	46
1974	1,284 lb	6,588 gal	16	18,695 lb	36
1975	1,276 lb	6,671 gal	16	20,587 lb	33
1976	1,273 lb	6,713 gal	14	17,843 lb	25
1977 (1)	1,251 lb	6,835 gal	11	18,342 lb	19
1978	426 hL	31,859 L	10	6,946 kg	19
1979	450 hL	30,343 L	10	7,117 kg	18
1980	480 hL	31,906 L	10	7,863 kg	16
1981	528 hL	27,873 L	8	8,260 kg	13
1982	585 hL	27,797 L	8	8,475 kg	13
1983	564 hL	30,891 L	8	7,800 kg	13
1984	584 hL	31,457 L	9	8,161 kg	11
1985	562 hL	31,287 L	10	6,372 kg	11
1986	579 hL	31,108 L	10	7,409 kg	11
1987	589 hL	29,695 L	11	7,062 kg	11

(1) Prior to 1977, yearly totals were calculated on a calendar year basis. From 1977 to date all figures are based on a fiscal year basis (April 1 - March 31).

Alberta Dairy Statistics 1955-1987

CHEDDAR CHEESE		VARIETY CHEESE		FLUID MILK SALES
Production	# plants	Production	# plants	
2,151 lb	10	---		(2) 296,982 lb
1,760 lb	7	---		382,835 lb
2,188 lb	6	---		384,754 lb
3,357 lb	6	155 lb	3	414,034 lb
4,768 lb	6	913 lb	4	451,516 lb
4,884 lb	6	2,186 lb	6	466,816 lb
6,307 lb	7	2,406 lb	6	468,599 lb
6,872 lb	7	3,161 lb	6	175,219 qt
8,013 lb	6	4,557 lb	6	197,238 L
3,935 kg	6	2,386 kg	8	202,171 L
3,649 kg	6	3,007 kg	11	248,936 L
3,921 kg	6	3,159 kg	11	263,016 L
3,599 kg	6	3,321 kg	11	270,931 L
4,023 kg	6	3,651 kg	10	269,783 L
4,160 kg	6	3,533 kg	10	261,411 L
5,768 kg	6	3,787 kg	10	256,798 L
6,315 kg	6	5,220 kg	10	256,032 L
6,822 kg	6	5,022 kg	10	256,989 L
6,836 kg	7	5,427 kg	9	266,980 L

(2) Includes Homo, 2%, Chocolate, Skimmilk and Buttermilk.

TABLE IV

Milk Cow Numbers

Year	No. Cows June 1st	Year	No. Cows June 1st
1950	297,800	1978	148,000
1955	285,000	1979	135,000
1960	279,000	1980	138,000
1965	262,000	1981	142,000**
1970	198,000	1982	158,000**
1973	169,000	1983	157,000**
1974	169,000	1984	157,000**
1975	170,000	1985	150,000**
1976	152,000	1986	152,000**
1977	155,000	1987	130,000**

* From 1955 forward, average butterfat test 3.5%; previous years were 3.6%.

** Census figure as of January 1 of that year.